

R e m a r k s

Claims 1-19 are pending in the application.

Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-12, 14, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 5,821,825 issued to Kobayashi on October 13, 1998.

Claims 13 and 15 were indicated to be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, second paragraph and to include all the limitations of the base claim and any intervening claims.

Each of the various rejections and objections are overcome by amendments which are made to the specification, drawing, and/or claims, as well as, or in the alternative, by various arguments which are presented.

Rejection Under 35 U.S.C. 112, Second Paragraph

Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office Action states that the recitation of “the terminal” on line 5 of claim 1 as originally filed lacks clear antecedent basis, as does the phrase “the same sign” on line 9 of claim 1.

With regard to the recitation of “the terminal”, this ground of rejection is respectfully traversed. Applicant notes that, with regard to “the terminal”, this phrase is really part of the larger phrase “one of the terminals of said active inductor”. Since an inductor inherently has two terminals, so likewise, as is well known in the art, does an active inductor inherently have two terminals. As a result it is not necessary to first introduce the terminal with the indirect article “a” and then refer to it with the direct article “the”. Instead, it is clearly permissible patent drafting practice to simply use the

phraseology employed by applicant and directly refer to “one of the terminals of the active inductor” due to the inherency of terminals in an active inductor. Furthermore, the phrase “one of the terminals” is clear and is well understood to refer to one of the two terminals of the active inductor without specifying in particular which one.

Note that with regard to terminals the claim must be carefully read, as there are terminals of the MOS transistor, i.e., the source terminal, the drain terminal, and the gate terminal, and there are also terminals of the active inductor as a whole, each of which may be collocated with a respective one of the terminals of the MOS transistor.

With regard to the recitation of “the same sign”, this ground of rejection is also, respectfully, traversed. It is well known in the art that sign of a voltage is an expression that refers to the polarity of the voltage. In other words, one of ordinary skill in the art would readily recognize from the claim language, i.e., from “the same sign” that applicant is indicating in the claim that the voltage derived from the power voltage with a larger absolute value than the power supply voltage has the same polarity as the power supply voltage.

With regard to the phrase “said other terminal” of claim 2, which the Office Action indicates lacks antecedent basis, applicant has amended claim 2 to recite “the other one of the terminals of said active inductor”. The new phraseology employs the inherency of two terminals in the active inductor and clearly distinguishes the terminal of the active inductor recited in claim 2 from the terminal of the active inductor recited in claim 1.

As to the recitation of negative/positive metal oxide semiconductor in claims 4, 5, 8, 9, and 18, applicant has amended claims 4, 5, 8, and 9 to recite negative/positive metal oxide semiconductor transistor. This change already existed in claim 18, which is believed to be correct as originally recited, especially in view of the fact that the Office Action did not object to claim 17, which has the same structure as claim 18.

The Office Action states that the phrase “the range” in claims 14, 16, and 18 (believed to be claim 19 since “the range” does not appear in claim 18 but it does appear in claim 19”) lacks antecedent basis. However, “the range” appears as part of the phrase “outside/beyond the range”. As is well known in the art, the phrase “outside/beyond the

range of the voltage" is a correct English language way of saying more than the maximum. Thus, use of the definite article is correct, and is not referring back to an element that should have been previously introduced.

With regard to claim 16, it is written in so-called "Jepson-type" format using the European preferred two-part style, hence the use of the transition phraseology "being characterized in that". Such format is perfectly acceptable in United States patent practice. Note that "being characterized in that" is essentially the equivalent in the English language as saying "wherein". The Examiner is directed to Landis on Mechanics of Patent Claim Drafting, Third Edition, section 57, p. 182.

Rejection Under 35 U.S.C. 103(a)

Claims 1-12, 14, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 5,821,825 issued to Kobayashi on October 13, 1998.

Applicant respectfully traverses this ground of rejection for the following reasons.

The Office Action's explanation of Kobayashi, is somewhat inconsistent and difficult to follow. However, applicant has analyzed the Office Action's comments and the Kobayashi reference and believe that the Office Action intended to indicate the following operation for Kobayashi, which applicant can agree with. In particular, in FIG. 4 of Kobayashi, M2 and M3, in combination, function similar to applicant's MOS transistor and that M4 is arranged as a variable resistor, in the same manner as R of FIG. 2 of Kobayashi. However, unlike applicant's claims, in Kobayashi the variable resistor is connected to ground. Thus, Kobayashi is typical of the prior art active inductors described by applicant in the background section of his specification and the detailed description at page 4.

The Office Action then proceeds to state that if the supply voltage of Kobayashi Vee is smaller than the threshold voltages of transistors M2-M3, the transistors cannot function. Applicant agrees that this is true.

The Office Action then states that if the transistors cannot function that a voltage multiplier should be used for boosting the gate voltages of the transistor. The Office

Action then concludes, without citing any proof, that the use of a voltage booster in the circuit of Kobayashi is a common practice and is considered a matter of design expedient for an engineer depending on the supply source used, so that a skilled person would be motivated to use a voltage booster in the circuit of Kobayashi for the purpose of accommodating the supply source.

In order for an obviousness rejection to stand, there must be some suggestion in the reference or well known in the art to take the cited reference and modify it in the obvious way. However, in the circuit of Kobayashi, there is sufficient voltage for the circuit to operate. Thus, there is no suggestion that there is any use for a voltage booster, the Office Action's statement to the contrary notwithstanding. Indeed, the fact that the Kobayashi circuit would operate properly as described in the Kobayashi reference, i.e., without a voltage booster, teaches away from requiring or using a voltage booster of any type with the circuit of Kobayashi.

Additionally, use of a voltage booster as suggested by the Office Action would simply increase the power supply voltage across the entire circuit, and only to the level necessary to get the transistors to turn on. There is no suggestion to have only the gates have a higher voltage connected to them.

Furthermore, there is no suggestion in Kobayashi that the transistors to which the Office Action would give a higher gate voltage are of the type that require larger gate voltages to turn on than any other transistor in the circuit. It is equally, if not more likely, that the gate voltage required to turn on those transistors is the same as or lower than the gate voltages required by other transistors in the circuit. Thus, there is no suggestion that such transistors require a higher gate voltage to operate at all.

Instead, it seems clear that the suggestion of the Office Action is derived using hindsight based on applicant's own disclosure. Such use of hindsight is improper.

Moreover, while it may be known generally to operate different sections of an overall circuit with different power supply voltages, such differences in voltage are typically divided along functional lines, e.g., a processor is operated at a lower supply voltage to reduce while the rest of the circuit external to the processor uses a different, higher power supply. However, it has not heretofore been recognized that an advantage

could be realized in the case of an active inductor by employing a gate voltage that is beyond the range of the power supply used for the rest of the active inductor. This is very different from the case of the processor, because in the case of the invention the greater voltage is used only for a single function within the same section of the circuit and it is used for all transistors in that part of the circuit in the same way.

Lastly, applicant achieves the advantages of raising the operating voltage of the entire active inductor by only raising the gate voltage at a single point. This reduces the current that is required from the high voltage source, reducing the power dissipation and permitting the higher voltage to be generated with minimal circuitry at low cost. By contrast, the Office Action, seems to be suggesting that the voltage booster raise the operating voltage for the entire circuit, or for at least all transistor of the same type and having the same gate voltage requirements. This would unduly raise the current dissipation and may be more difficult and/or expensive to achieve.

Thus, applicant's invention is not suggested by Kobayashi and is not merely a design expedient. As a result, applicant's claims are allowable over Kobayashi under 35 U.S.C. 103(a).

Conclusion

It is respectfully submitted that the Office Action's rejections have been overcome and that this application is now in condition for allowance. Reconsideration and allowance are, therefore, respectfully solicited.

If, however, the Examiner still believes that there are unresolved issues, he is invited to call applicant's attorney so that arrangements may be made to discuss and resolve any such issues.

In the event that an extension of time is required for this amendment to be considered timely, and a petition therefor does not otherwise accompany this amendment, any necessary extension of time is hereby petitioned for, and the Commissioner is authorized to charge the appropriate cost of such petition to the **Lucent Technologies Deposit Account No. 12-2325.**

Respectfully,

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Date: January 25, 2001